Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (**Currently Amended**) A method for forming a two-dimensional ordered array of proteins, comprising:

contacting a population of proteins with a gas-aqueous interface;

laterally compressing said population to an appropriate pressure, such that a two-dimensional ordered array of said proteins is formed at said interface, wherein said proteins are not solubilized using detergent.

2. (**Cancelled**).

3. (**Previously Presented**) The method of claim 64, wherein said amphiphilic molecule comprises a protein.

4. (**Previously Presented**) The method of claim 1, wherein said protein is a membrane protein, a cellular receptor, an orphan receptor, receptor tyrosine kinase, an EPH receptor, an ion channel, a cytokine receptor, an multisubunit immune recognition receptor, a chemokine receptor, a growth factor receptor, or a G-protein coupled receptor.

5. (**Previously Presented**) The method of claim 1, wherein said protein is contacted with said interface in the presence of lipids.

6. (**Previously Presented**) The method of claim 1, further comprising applying said proteins to said interface in proteoliposomes, liposomes, or a cellular membrane.

7. (**Cancelled**).

8. (**Currently Amended**) The method of claim 1, wherein said interface is an air-aqueous interface.

Claims 9-62 (**Cancelled**).

63. (**Currently Amended**) A method for forming a two- or three-dimensional ordered array of water insoluble membrane proteins, comprising:

contacting a population of water insoluble membrane proteins with a gas-aqueous interface, wherein said population of membrane proteins are applied to said interface in a proteoliposome;

laterally compressing said population to an appropriate pressure, such that a two- or three-dimensional ordered array of said water insoluble membrane proteins is formed at said gas-aqueous interface.

64. (**Currently Amended**) A method for forming a three-dimensional ordered array of ~~amphiphilic molecules~~ water insoluble membrane proteins, comprising:

contacting a population of ~~amphiphilic molecules~~ water insoluble membrane proteins with a gas-aqueous interface;

laterally compressing said population to an appropriate pressure, such that a three-dimensional ordered array of said ~~amphiphilic molecules~~ water insoluble membrane proteins is formed at said interface, wherein said appropriate pressure is above a critical density point for the formation of a two-dimensional ordered array of said ~~amphiphilic molecules~~ water insoluble membrane proteins.

Claims 65-66. (**Cancelled**).

67. (**Previously Presented**) The method of claim 1, wherein said two-dimensional ordered array is a two-dimensional crystalline array.

68. (**Previously Presented**) The method of claim 64, wherein said three-dimensional ordered array is a three-dimensional crystalline array.

69. (**Previously Presented**) The method of claim 3, wherein said protein is a membrane protein, a cellular receptor, an orphan receptor, receptor tyrosine kinase, an EPH receptor, an ion channel, a cytokine receptor, an multisubunit immune recognition receptor, a chemokine receptor, a growth factor receptor, or a G-protein coupled receptor.

70. (**Previously Presented**) The method of claim 3, wherein said protein is contacted with said interface in the presence of lipids.

71. (**Previously Presented**) The method of claim 3, further comprising applying said proteins to said interface in proteoliposomes, liposomes, or a cellular membrane.

Claims 72-73 (**Cancelled).**

74. (**New**) A method for forming a two- or three- dimensional ordered array of proteins suitable for use in crystallography to determine said protein's structure, comprising:

contacting a population of proteins with a gas-aqueous interface;

laterally compressing said population to an appropriate pressure, such that a two-dimensional ordered array of said proteins is formed at said interface, wherein the structure of said protein using said two- or three- dimensional ordered array can be determined to a resolution of 5 Å or higher.

75. (**New**) A method for forming a two-dimensional ordered array of proteins, comprising:

contacting a population of proteins with a gas-aqueous interface;

laterally compressing said population to an appropriate pressure, such that a two-dimensional ordered array of said proteins is formed at said interface, wherein said two-dimensional ordered array is formed in the absence of a ligand of said protein.

76. (**New**) A method for forming a two- or three-dimensional ordered array of water insoluble membrane proteins, comprising:

contacting a population of water insoluble membrane proteins with a gas-aqueous interface;

laterally compressing said population to an appropriate pressure, such that a two- or three-dimensional ordered array of said water insoluble membrane proteins is formed at said gas-aqueous interface.